

CLAIMS

What is claimed is:

1. A method for controlling range shifting in a vehicular transmission system, said method comprising:

determining (i) if a range up-shift has been initiated, (ii) if a position of a shift lever is in a low range neutral position, and (iii) if a vehicle speed is greater than a predetermined value; and

automatically performing an up-shift of the vehicular transmission system to a high range if said determining step determines (i) that the range up-shift has not been initiated, (ii) that the shift lever is in the low range neutral position, and (iii) the vehicle speed is greater than the predetermined value.

2. The method of claim 1, wherein the predetermined value is defined as a road speed greater than or equal to that corresponding to a maximum engine speed plus approximately five hundred RPM for a low range gear ratio in a predetermined main section gear.

3. The method of claim 2, wherein the vehicular transmission system includes a splitter section, and the same predetermined main section gear is employed in calculating the predetermined value so long as the shift lever is in a low range neutral position, and a ratio of a selected splitter gear is also employed in calculating the predetermined value.

4. The method of claim 1, wherein the up-shift is performed by standard shift protocols if the range up-shift has been initiated.

5. The method of claim 1 wherein if the position of the shift lever is not in neutral, then no up-shift to range high is performed, and the transmission system continues to monitor the shift lever position and the vehicle.

6. A controller-assisted, manually shifted vehicular transmission system comprising an internal combustion engine driving an input shaft of a compound transmission having a multiple-ratio main section shifted by a shift lever manually movable in a shift pattern and a splitter auxiliary section connected in series with said main section, a splitter shift mechanism for automatically implementing splitter shifts and a controller for receiving input signals indicative of system operating conditions and for processing same according to predetermined logic rules to issue command output signals to system actuators, including said splitter shift mechanism,

wherein said controller includes logic rules for:

10 determining (i) if a range up-shift has been initiated, (ii) if a position of a shift lever position is in a low range neutral position, and (iii) if a vehicle speed is greater than a predetermined value; and

automatically performing an up-shift of the vehicular transmission system from a low range to a high range if said determining step determines (i) that the range 15 up-shift has not been initiated, (ii) that the shift lever is in the low range neutral position, and (iii) the vehicle speed is greater than the predetermined value.

7. The method of claim 6, wherein the predetermined value is defined as a road speed greater than or equal to that corresponding to a maximum engine speed plus approximately five hundred RPM for a low range gear ratio in a predetermined main section gear.

8. The method of claim 6, wherein the vehicular transmission system includes a splitter section, and the same predetermined main section gear is employed in calculating the predetermined value so long as the shift lever is in a low range neutral position, and a ratio of a selected splitter gear is also employed in calculating 5 the predetermined value. .

9. The method of claim 6, wherein the up-shift is performed by standard shift protocols if the range up-shift has been initiated.

10. The method of claim 6 wherein if the position of the shift lever is not
in neutral, then no up-shift to range high is performed, and the transmission system
5 continues to monitor the shift lever position and the vehicle.